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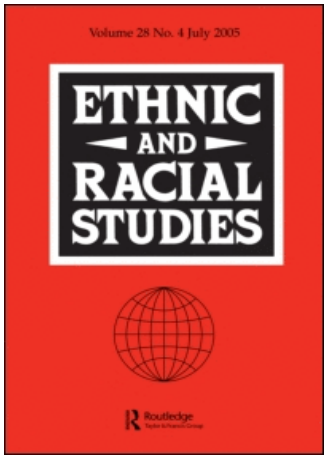
Published in:
Ethnic And Racial Studies

DOI:
10.1080/01419870600814015



Ethnic and Racial Studies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713685087

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Online Publication Date: 01 September 2006
To cite this Article: Hello, Evelyn, Scheepers, Peer and Sleegers, Peter (2006) 'Why the more educated are less inclined to keep ethnic distance: An empirical test of four explanations', Ethnic and Racial Studies, 29:5, 959 - 985
To link to this article: DOI: 10.1080/01419870600814015
URL: http://dx.doi.org/10.1080/01419870600814015

Ethnic and Racial Studies Vol. 29 No. 5 September 2006 pp. 959–985

Why the more educated are less inclined to keep ethnic distance: An empirical test of four explanations

Evelyn Hello, Peer Scheepers and Peter Sleegers

Abstract

More educated individuals are more tolerant towards ethnic minorities than less educated individuals. This is one of the most consistent findings in studies on different expressions of intolerance towards ethnic minorities. In this contribution we set out to explain this recurrent finding by studying the educational effect on ethnic distance in a Dutch sample of young adults who have recently been exposed to the educational system. We have tested four explanations for the educational effect that are derived from different theoretical traditions: (i) perceived threat from ethnic minorities, (ii) cognitive sophistication, (iii) authoritarianism, and (iv) open-mindedness. We managed to explain the educational effect to a large degree (almost 67 per cent). Perceived threat turns out to be the most important explanatory factor (it accounts for 56 per cent of the educational effect), followed by authoritarianism, whereas cognitive sophistication and open-mindedness turn out to be of negligible importance for the explanation of the educational effect.

Keywords: Education; ethnic distance; perceived threat; cognitive sophistication; authoritarianism; open-mindedness.

Introduction

Since the 1950s many studies have tried to explain different expressions of intolerance (Adorno *et al.* 1950; Allport 1954; Stouffer 1955; Lipset [1956] 1981). Some of these studies focused on the restriction of civil rights or liberties for particular out-groups (Scheepers, Gijsberts and Coenders, 2002), others on prejudice towards ethnic minorities, and there are also studies that focused on social distance as an expression of intolerance (Schuman *et al.* 1997).

One of the main and persistent findings that these studies had in common, was that higher educated individuals are more tolerant than lower educated individuals. Higher educated individuals turned out to

ISSN 0141-9870 print/1466-4356 online
DOI: 10.1080/01419870600814015

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keep less social distance from ethnic minorities, to have less stereotypic beliefs about ethnic minorities (Schuman *et al.* 1997), to be less ethnocentric (Scheepers, Felling and Peters 1989) and to be less anti-Semitic (Selznick and Steinberg 1969; Eisinga, Konig and Scheepers 1995) than lower educated individuals. Furthermore, educational attainment has proved to be the strongest determinant of intergroup attitudes (see for example Jackman and Muha 1984; Pedersen 1996). This finding was demonstrated in the first studies on intolerance (Stouffer 1955; Lipset [1956] 1981), and has appeared time and again in many studies in different countries ever since (Hello, Scheepers and Gijsberts 2002). Moreover, higher educated individuals turned out to be not only more tolerant towards ethnic minority groups but also towards other minority groups such as homosexuals and radical left-wing activists (see for example Hyman and Wright 1979; Vogt 1997). This recurrent finding is often interpreted as the liberalizing effect of education: education makes you more liberal, i.e. more tolerant and less prejudiced (Selznick and Steinberg 1969; Hyman and Wright 1979).

This recurrent finding led to many studies trying to explain the educational effect on intolerance. Over time, numerous explanations have been suggested for the recurrent effect of educational attainment on different expressions of intolerance. Most of these explanations can be found at the individual level[1] That is, they refer to mechanisms that occur within the individual. However, the majority of these explanations have been tested in a rather fragmented way, not allowing for any 'open competition' with other kinds of explanations[2]. It is therefore still not clear how the educational effect on different expressions on tolerance can be explained.

In this study, we shall focus on The Netherlands, since this country has shown itself to be a good test-case for explanations of the educational effect, as the educational effect is stronger in The Netherlands than in (a set of) other European countries (Hjerm 2001; Hello *et al*. 2002). Our aim is to explain the relationship between educational attainment and ethnic distance – (the intention to keep distance from ethnic minorities). We shall improve on previous studies by using valid, reliable, well-known, and generally accepted measurements. Furthermore, we shall test different explanations simultaneously in order to estimate their relative importance. For this purpose, we shall use data from 301 young adults, aged between 18 and 27 at the time of the interview in 2000. They have recently been 'exposed' to the educational system, which makes it more plausible to ascribe the educational effect to their educational experiences instead of to other experiences that are the consequence of their educational attainment, such as their professional lives. Moreover, by looking at young adults we gain a better idea of the *recent* influence of

educational attainment on ethnic distance, and the way this can be explained.

Explanations for the association between educational attainment and ethnic distance

There are several possible explanations for the strong and persistent educational effect on tolerance towards ethnic minorities. Most of these explanations refer to intermediary factors that (partly) mediate the direct effect of educational attainment on tolerance of ethnic minorities, as a way to grasp the underlying 'mechanism' through which educational attainment reduces intolerance (see for example Jenssen and Engesbak 1994; Wagner and Zick 1995). We shall look at intermediary factors that may explain the strength of the educational effect on ethnic distance. We shall derive these explanatory factors from different theoretical traditions and from different perspectives on educational attainment. In the first explanation, educational attainment is considered from a structural point of view, whereas in the following explanations, education is considered from a more personal viewpoint.

Realistic Conflict Theory

Educational attainment can be regarded as an indicator of social status, i.e. of one's social position. A branch of classic theory, i.e. realistic conflict theory (Blalock 1967; LeVine and Campbell 1972; Olzak 1992; Quillian 1995; Scheepers *et al.* 2002*a*) aims at explaining intolerance of ethnic minorities by the positions that people have in society. Realistic conflict theory refers to rational behaviour of individuals: the competition for scarce resources on all kinds of markets, e.g. the labour market or the housing market. Although this is in fact a struggle between individuals, people tend to regard themselves as members of in- and out-groups on the basis of their ethnic backgrounds (Tajfel 1982). Therefore, the individual struggle for scarce resources becomes a struggle between ethnic groups. This ethnic competition takes place across the whole social spectrum of individuals, and may consist of struggling for power, for housing, for jobs, for getting a good education, for a good future for your children, etc.

The higher educated can rely on more and better resources, and they are less often in direct competition with ethnic minorities, since the higher educated and the lower educated compete on different niches in various markets. As ethnic minorities are often ranked among the lower strata and are often lower educated, 'indigenous' lower educated are more likely to feel threatened by them. Since lower educated

individuals are more likely to live in the same neighbourhoods, and to attend, or to have attended, the same schools as ethnic minorities, the competition for various scarce resources among the lower educated is more often interpreted in ethnic terms. Moreover, the more educated have obtained more advantaged positions in society, and will therefore face less ethnic competition than the less educated on, for instance, the labour market. As a consequence, individuals with a high level of education are less likely to perceive ethnic minorities as a threat than individuals with a lower level of education. Therefore, we can state that more educated individuals are less inclined to keep social distance from ethnic minorities, *because* they are less likely to perceive ethnic minorities as a threat. We shall test this hypothesis, and, furthermore, ascertain the relative contribution of this explanation.

Cognitive-psychological theory

Through education individuals develop the ability to reason independently, the ability to organize and apply information, in short they develop their cognitive competence (Hyman and Wright 1979; Lipset 1981; Bobo and Licari 1989; Jenssen and Engesbak 1994). The higher the level of education of individuals, the more they will be able to understand that principles of equality apply to all, regardless of ethnic background (cf. Prothro and Grigg 1960, p. 291; see also Biggs and Barnett 1981; Rest 1988), and as a consequence, they will support ethnic distance much less. Although this argument is often made, it is hardly ever properly tested. Nonetheless, there have been a few attempts to relate intolerance to cognitive sophistication (see Bobo and Licari 1989). In some studies, some 'unusual' measures of cognitive sophistication turned out to be associated with some measurements of tolerance/intolerance. For example, Glock *et al.*, (1975) found that cognitive sophistication, as measured by intellectual interests, reduced anti-Semitism. Furthermore, Jenssen and Engesbak (1994) used a scale of 'knowledge of ethnic minorities' as an indicator of cognitive sophistication.

Social-psychological theory

Authoritarianism: A classic psychological explanation, which was highly influenced by Nazi fascism, trying to explain the adherence to this ideology, is based on 'The Authoritarian Personality', the famous study by Adorno and his colleagues from the Frankfurter Schule (1950). This study points to authoritarianism as an explanation of intolerance, like ethnic distance. Authoritarianism is considered to be a personality trait, and refers to the degree to which people submit themselves to authorities and want to subject weaker others to their

own authority (Adorno *et al.* 1950; Sanford 1973). In the original study, it was assumed that authoritarianism develops in early childhood as a result of a particular style of upbringing (Adorno *et al.* 1950). The usual indicators of social background were not considered very important. However, in several studies, strong correlations were found between occupational status and authoritarianism, and even stronger associations between educational attainment and authoritarianism (Selznick and Steinberg 1969; Quinley and Glock 1979; Scheepers, Felling and Peters 1990; Vollebergh 1991). Furthermore, Gabennesch (1972) argued that education broadens people's social perspective, which reduces their 'unconditional' faith in authorities. Putting the pieces together, we can state that the more educated young adults are, the less authoritarian they will be, which in turn lowers their ethnic distance. We shall test this hypothesis, and also establish the relative importance of authoritarianism for the explanation of the educational effect on ethnic distance.

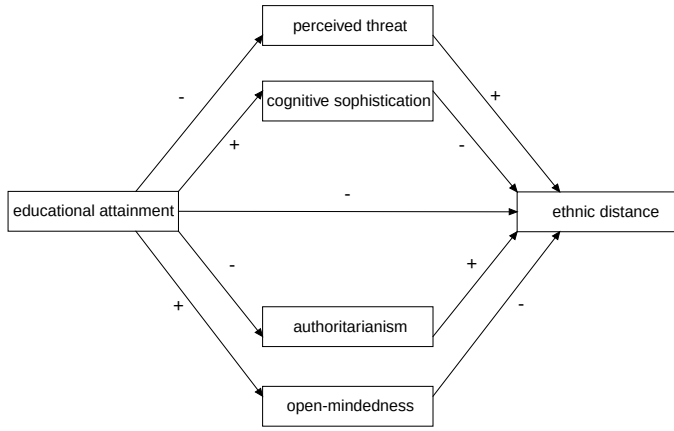
Open-mindedness: Another explanatory factor derived from social-psychological theory refers to another personality trait that is often mentioned to be an important determinant of intolerance and prejudice, namely open-mindedness. In reaction to the extraordinary attention that the work on the authoritarian personality attracted, Rokeach (1960) developed a closed-mindedness scale, which was not only intended to identify right-wing dogmatism, like the authoritarianism scale, but also left-wing dogmatism. One of his most important findings is that individuals who are more rigid in their problem-solving behaviour, and more narrow in their grasp of a particular subject, i.e. closed-minded personalities, turned out to be high in ethnic prejudice, whereas more open-minded personalities turned out to be low in ethnic prejudice (Rokeach 1960).

Moreover, open-mindedness is related to educational attainment: through education one learns more about different aspects of the world, which reduces fear of the unknown or strangeness, and one becomes more open to new experiences (Pascarella *et al.* 1996; Vogt 1997). We may therefore state that the more educated are more open-minded, and that this in turn makes them less inclined to ethnic distance. Besides testing this hypothesis, we shall also ascertain the relative power of this explanation. We have summarized the different theoretical explanations for the educational effect on ethnic distance in Figure 1.

Data and measurements

We use a Dutch panel study which started in 1990 (Gerris *et al.* 1992). In 1990, the first wave was done using a multi-stage sampling method.

Figure 1. *Theoretical model for the explanation of the educational effect on ethnic distance.*



First, a sample of municipalities was drawn, based on regional zone and degree of urbanization. Second, a sample was drawn of two groups of children, aged 9–12 and 13–16 respectively, with as many boys as girls. These children and their parents were contacted. Follow-up waves of this panel study took place every five years.

For this contribution, we focused on the principal respondents in the third wave of the panel study (Vermulst *et al.* 2003), which took place in 2000, i.e. the grown-up children, who are now young adults. In that year, 301 young adults participated. That is 38 per cent of the first wave (301/788) and 48 per cent (301/625) of the contacted families. The young adults are all native Dutch; the sample does not contain any member of ethnic minority groups. At the time of the interview, their ages ranged between 18 and 27. They have recently been 'exposed' to the educational system, which makes it more plausible to ascribe the educational effect to their educational experiences, instead of other experiences that were the consequence of their educational attainment, such as their professional lives. Moreover, by looking at young adults, we get a better idea of the *recent* influence of educational attainment on ethnic distance, and the way this can be explained.

The third wave is non-selective with respect to age (year of birth) compared to the first (χ^2 [9] = 10.92) and second waves (χ^2[9] = 17.43). However, in the third wave, more girls participated compared to the first wave (χ^2[1] = 4.40), but not compared to the second wave (χ^2[1] = 1.79). Moreover, since educational attainment is so important in this study, we would like to know whether the sample is selective with respect to education attainment. As educational attainment is not a stable characteristic yet, it would certainly show significant differences

over time. Therefore, we compared the educational attainment of all young adults who participated in 1995 with the educational attainment (in 1995) of the young adults who also participated in 2000. It turned out that the ones who participated in the 2000 wave did not differ with respect to their educational attainment from the total group of participants in the 1995 wave ($\chi^2[8] = 9.39$)[3].

Ethnic distance: The intention to avoid social contact with ethnic minorities

The concept of ethnic distance refers to the intention to avoid social contact with ethnic minorities in three different social life domains of young adults: school, clubs/associations, and neighbourhood. The structure of the scale is rooted in the classic social distance scales of Bogardus (1958), since respondents are asked to indicate how they would react in particular situations with a varying degree of social distance towards ethnic minorities. Ethnic distance is measured in young adults by presenting them twelve items (see Appendix A). Each domain of social life is covered by four items, which have the same four answer categories: (1) I would not object, (2) I might not object, (3) I might object, and (4) I would object. Each domain forms a valid and reliable sub-scale, which can be regarded as a probabilistic scalogram or a Mokken scale[4] (Molenaer *et al.* 1994). It turned out that, as items introduce respondents to situations with more intimate social contact with ethnic minorities, the resistance to have contact with ethnic minorities increased. All scale coefficients (Loevinger's H) were higher than .80, which indicates that these scales are considered strong (Mokken 1971, p. 185). The reliability coefficients (rho) of these sub-scales ranged between .80 and .94, which means that these scales are highly reliable. Finally, respondents' responses to these items were added up. Each sub-scale therefore ranges between four and sixteen. The higher respondents' scores are on these scales, the more intolerant they are towards the presence of ethnic minorities at schools, in clubs/associations or neighbourhoods.

Next, we checked whether these Mokken scales represent one concept, namely ethnic distance. This turned out to be the case, as Cronbach's alpha is .81 (see Table A2 in Appendix A). The factor loadings on these three sub-scales on ethnic distance are used to compute their scores on ethnic distance.

Perceived threat

Perceived threat is measured by presenting young adults four items tapping perceived threat. These items have previously proved to be good indicators of perceived threat (Scheepers *et al.* 2002*a*).

Respondents could indicate on a seven-point scale the degree to which they agreed with these items. The scale ranged from (1) 'strongly disagree' to (7) 'strongly agree'. We constructed a scale of perceived threat by computing the mean of the scores. This scale is very reliable as Cronbach's alpha is .81. However, there were quite a number (40) of missing values on this scale. We replaced the missing values by the mean score of the scale. More detailed information on this scale is available on request.

Cognitive sophistication

We used an elaborate and generally accepted measurement for cognitive sophistication, i.e. a verbal ability test, originating from the Dutch version of the General Aptitude Test Battery (US Department of Labor 1970), i.e. a test of general intelligence, in order to measure cognitive sophistication. A rich vocabulary often indicates a sensitivity to new information and an ability to reorganize ideas in more complex ways and as differing situations demand (Bobo and Licari 1989). This verbal ability test consisted of fifty word ranges of four words (Vermulst *et al.* 2003). Of each set of four words, respondents had to choose either two words with the same meaning, or two words with the opposite meaning. Whether respondents had to deal with a similarity or dissimilarity differed randomly across the word sets[5]. The respondents had exactly six minutes to give as many correct answers as possible. As soon as the six minutes were over, the respondents would have to stop immediately. All interviewers were given this instruction and used a stopwatch to be sure respondents worked exactly six minutes on this test. For every correct answer, respondents were given one point. The scores may therefore range between 0 and 50. In fact, the scores range between 8 and 42 (see Appendix B). This vocabulary test had previously shown to have a high loading on the *g*-factor, i.e. on general intelligence (see Te Nijenhuis and Van der Flier 1997).

Next, we checked the reliability of this test. Since we worked with a time constraint, a large number of young adults did not answer the items at the end of the test. As a consequence, all the scores on the last items will be zero for these young adults. These last items will therefore be highly correlated, which makes Cronbach's alpha spuriously high. Taking this into consideration, we used only those items that had been answered by approximately 90 per cent of the young adults, i.e. the first 29 word sets, to estimate the reliability of the verbal ability test. It turned out to be a highly reliable verbal ability test: Cronbach's alpha was .82[6].

Authoritarianism

Authoritarianism in these young adults was measured by presenting them four items from the original F-scale (Adorno *et al.* 1950), generally used to measure authoritarianism[7]. The respondents had to indicate on a seven-point scale to what extent they agreed with these statements. The answer categories ranged from (1) 'strongly disagree' to (7) 'strongly agree'. The score on the scale of authoritarianism was computed as the mean score on these four items. The reliability of this scale is acceptable: Cronbach's alpha is 0.60. The higher their score on this scale, the more authoritarian young adults are. There were quite a number (40) of missing values on this scale. We replaced these by the mean score of the scale.

Open-mindedness

The original instrument to measure open-mindedness (Rokeach 1960) has fallen into disuse. However, a more recent, and more sophisticated measurement for open-mindedness was available: we measured open-mindedness with one of the Big Five personality characteristics (Goldberg 1992). In 1995 (the previous wave of this panel study) 102 Big Five markers[8] were used to tap the Big Five factor structure. After extensive factor analyses, thirty items were selected to measure the five dimensions: six items for every dimension. These thirty selected items were used again in the 2000 study. Respondents had to indicate for each personality characteristic the extent to which these traits suited them. They could answer on a seven-point scale, varying from (1) 'does not suit me at all' to (7) 'suits me completely'. This resulted in the Five Personality Dimensions that have traditionally been numbered and labelled as follows: I) Surgency (or Extroversion), II) Agreeableness, III) Conscientiousness, IV) Emotional Stability, and V) Openness. We shall use the latter as an indicator of open-mindedness[9]. The reliability of this scale for open-mindedness is rather good, since Cronbach's Alpha is .74.

Educational attainment

The level of educational attainment of these young adults was measured by the information these respondents provided on their educational careers. However, only 48 per cent of the young adults had completed their educational careers in 2000, as they were aged between 18 and 27. Therefore, we used information on the type of education respondents attended at the time of the interview, and the type of education respondents had already completed. As soon as respondents were past the half-way mark of their current education,

and indicated that they would complete that particular type of education, we classed them as having the corresponding level of education. If respondents had just started that level of education or indicated not to finish that level of education, we classed them according to the level of education they had previously completed. The Dutch educational system can be divided into eight categories: (1) primary education, (2) lower vocational training, (3) lower general secondary education, (4) intermediate general secondary education, (5) intermediate vocational training, (6) pre-university education, (7) higher vocational education, (8) university education.

Other individual characteristics

We also considered common background characteristics which might affect ethnic distance or ethnic prejudice. Age is, rather straightforward, measured in years. Young adults are aged between 18 and 27. There is no valid indicator of the incomes of young adults, as not all young adults work, and if they do, they have not reached their professional status and corresponding level of income yet. However, there is information about the amount of money they are free to spend, which may be pocket-money, a scholarship, and/ or wages from a side-line or a regular job. Gender was measured as: (1) male, (2) female. We also obtained information on the religious background of young adults (cf. Scheepers, Gijsberts and Hello 2002*b*): whether they are church members: (1) no, (2) yes, or (3) not sure, and how often they attend church, measured in four categories (1) never, (2) once to a few times a year, (3) once a month, and (4) once a week. To which church they belong, their religious denomination, was measured in thirteen categories, as there are many different Christian churches in The Netherlands. We recoded these into the four most important denominations (1) Roman Catholic, (2) Protestant, (3) Dutch Reformed, and (4) other denominations. Descriptions of these characteristics, and the scales of the explanatory factors and ethnic distance, as described above, are shown in Appendix B.

Confirmatory factor analysis

The description of the measurements showed that we use valid and reliable measurements. We tested whether the items we used for computing the measured scales truly represent the factors that they are meant to represent, and, moreover whether we could consider these factors as distinct factors. For that purpose, we performed a Confirmatory Factor Analysis using Structural Equation Modelling with LISREL 8.51 (Jöreskog and Sörbom 2001). We included all the

items that we used to construct the scales. Since verbal ability is measured as an overall test-score, we only included this single test-score in the factor analysis[10]. As indicators of ethnic distance we used the three Mokken scales, instead of the twelve items on which these were originally based, in the factor analysis, as we had also computed the score on ethnic distance on the basis of these three Mokken scales (see Appendix A.).

The results shown in Table 1 confirm that the items do indeed represent distinctive factors[11]. The model fit is satisfying (RMSEA is 0.059; GFI is .917)[12]. Moreover, this model could hardly be improved by allowing cross-loadings, i.e. allowing variables to load on other than the expected latent constructs. This indicates that we used the proper items for the proper scales. We can, therefore, consider these scales as distinct, i.e. referring to different concepts, not only on theoretical grounds, but also on empirical grounds. Overall, the factor loadings, or lambda coefficients are quite high, except for the personality characteristics 'innovative' and 'inquisitive'.

Bivariate associations

Before we estimated our theoretical model, we first took a look at the bivariate associations between the individual characteristics, ethnic distance, and the explanatory factors. These are shown in Table 2. We shall only use relevant, i.e. significantly associated control variables in the Structural Equation Modelling in order to keep the model as simple as possible. It shows that we should only control for the association between age and educational attainment and gender and ethnic distance. Income, church membership and denomination turn out to be irrelevant for educational attainment and ethnic distance. Furthermore, these initial bivariate analyses show that we cannot yet assess which explanatory factors will be most important for explaining the educational effect on ethnic distance, since they are all quite strongly correlated with both educational attainment and ethnic distance. However, cognitive sophistication seems to be strongly associated with educational attainment, but not so strongly with ethnic distance. The association between open-mindedness and ethnic distance is also quite modest.

The bivariate associations between the explanatory factors are displayed in Table 2. The fact that the explanatory factors are distinct, does not mean that they do not correlate. As you can see, perceived threat and authoritarianism in particular are highly correlated (.478). As this might cause some problems when estimating the model, we kept an eye on this association.

Table 1. *Results of confirmatory factor analysis of five factors: Standardized lambda coefficients. N = 301 young adults*

	Perceived threat	Cognitive sophistication	Authoritarianism	Open-mindedness	Ethnic distance
Education of children of ethnic minorities is harmful to Dutch children.	.64**				
There are many criminals among asylum seekers.	.77**				
Ethnic shopkeepers undermine the business of Dutch shopkeepers.	.65**				
Budget cuts in social security would not be necessary if there were not so many unemployed among ethnic minorities.	.84**				
Verbal Intelligence Test Score		1.00			
What we need is fewer laws and institutions and more courageous, tireless and devoted leaders in whom people can put their faith.			.46**		
People can be divided into two distinct classes: the weak and the strong.			.60**		
Most of our social problems would be solved, if we could somehow get rid of immoral, crooked and feeble-minded people.			.60**		
Young people sometimes get rebellious ideas, but as they grow up, they ought to get over them and settle down.			.65**		
Artistic				.69**	
Imaginative				.73**	
Innovative				.33**	

Table 1 (*Continued*)

	Perceived threat	Cognitive sophistication	Authoritarianism	Open-mindedness	Ethnic distance
Inquisitive				.22**	
Creative				.88**	
Versatile				.45**	
Avoidance of social contact with ethnic minorities at school					.70**
Avoidance of social contact with ethnic minorities in clubs/associations					.54**
Avoidance of social contact with ethnic minorities in the neighbourhood					.76**
X^2 [119] = 245.22, p = 0.00, RMSEA = 0.059, GFI = 0.917					

* $p < .05$; ** $p < .01$ (two-tailed)

Table 2. *The bivariate associations between individual characteristics and explanatory factors and educational attainment and ethnic distance. N = 301 young adults*

	Educational attainment	Ethnic distance	Perceived threat	Cognitive sophistication	Authoritarianism
Individual characteristics					
Age	.288**	−.012			
Gender	.068	−.248**			
Church member	−.017	−.074			
Church attendance	.141	.080			
Denomination [a]	−.127	.110			
Income	−.026	.076			
Educational attainment		−.257**			
Explanatory factors					
Perceived threat	−.315**	.601**			
Cognitive sophistication	.488**	−.174**	−.210**		
Authoritarianism	−.262**	.353**	.478**	−.246**	
Open-mindedness	.214**	−.132**	−.192**	.134**	−.108

* $p < .05$; ** $p < .01$ (two-tailed)

[a] For denomination we computed the polyserial correlations in PRELIS.

Results of structural equation modelling

In order to estimate the relative influence of the different explanatory factors simultaneously, we used Structural Equation Modelling with LISREL 8.51 (Jöreskog and Sörbom 2001). We opted for Structural Equation Modelling since this technique makes it possible to test our theoretical model as a whole. Another advantage of this technique, is that we get an evaluation of this particular model with model fit parameters.

We tested the recursive, i.e. without reciprocal effects, theoretical model as described in Figure 1. To estimate the structural model we used the above-mentioned scale scores as input and the maximum likelihood technique. We first set out to test the explanatory power of each of the explanatory factors independently of the other factors, by including them one by one into the model. The results of this procedure are shown in Table 3.

We started with a basic model (1) in which the educational effect on ethnic distance is estimated and controlled for the effects of age and

Table 3. *The direct, indirect, and total standardized educational effect in models with one explanatory factor at the time, and goodness of fit indicators of the different models. N = 301 young adults*

		Direct effect	Indirect effect	Total effect	X^2 [df]	p	RMSEA	GFI
1	Basic model	−.242**	x	−.242**	3.427 [2]	.180	.049	.994
2	1 + Perceived threat	−.098**	−.150**	−.248**	11.324 [4]	.023	.078	.985
3	1 + Cognitive sophistication	−.224**	−.018	−.242**	7.967 [4]	.092	.058	.989
4	1 + Authoritarianism	−.179**	−.064**	−.243**	5.208 [4]	.267	.032	.993
5	1 + Open-mindedness	−.229**	−.014	−.243**	6.542 [4]	.162	.046	.991

* $p < .05$; ** $p < .01$ (two-tailed)

Table 4. *The relative influence of the explanatory factors in the subsequent models 2,3,4 and 5. Indirect standardized educational effects. N = 301 young adults*

	Indirect educational effect	% of total educational effect
Educational attainment perceived threat ethnic distance	−.150**	60.3%
Educational attainment cognitive sophistication ethnic distance	−.018	7.4%
Educational attainment authoritarianism ethnic distance	−.064**	26.2%
Educational attainment open −mindedness ethnic distance	−.014	5.6%

* $p < .05$; ** $p < .01$ (two-tailed)

gender. To this basic model we added, first of all, perceived threat (model 2) as an explanatory factor. Now, the effect of educational attainment on ethnic distance is split up in a direct effect and an indirect effect, the latter is the effect that goes through the explanatory factor, in this case 'perceived threat'. Moreover, this indirect effect is rather large (−.150), compared to the direct effect (−.098). That means that, by including perceived threat as an explanatory factor, we managed to explain the educational effect to a large degree. The degree to which the explanatory factors account for the educational effect is shown in Table 4.

In fact 60 per cent (see Table 4) of the educational effect is explained by perceived threat. Next, we added cognitive sophistication as an explanatory factor to the basic model (1). Only a negligible part of the educational effect is explained by this factor: the indirect effect is rather small (−.018) compared to the direct effect (−.224). This means that cognitive sophistication accounts for only 7 per cent of the educational effect (see Table 4). Authoritarianism, when added as an explanatory factor to the basic model, is responsible for a significant indirect effect of education (−.064); it accounts for 26 per cent of the education effect. The explanatory power of open-mindedness turns out to be rather modest. Almost 6 per cent of the educational effect is explained by the latter explanatory factor.

Although the pattern of the relative importance of the explanatory factors was already quite clear, we also tested the relative power of the different explanatory factors by including them all into one model. We started with the same basic model (1), in which only the educational effect on ethnic distance was estimated, while controlling for the effect of age and gender. Next, we added perceived threat to the model (2),

and from then on, we kept on adding the explanatory factors into one cumulative model. The stepwise inclusion of the explanatory factors, and the goodness-of- fit statistics are shown in Table 5. The indirect effects, as presented in this table, are the sum of all indirect effects that go through the explanatory factors included in the specific model. Consequently, the more explanatory factors were included in the model, the higher the sum of indirect effects was, and, thus, the more we explained the educational effect.

Next, we checked for omissions in the models by looking at the modification indices. Like the bivariate associations already indicated (see Table 2), the association between 'perceived threat' and 'authoritarianism' should be taken into account by setting the error covariance between these variables free[13]. This means that we let the errors between these variables correlate. This improved the model fit significantly $P^2[1] = 51.956$. Moreover, both RMSEA and GFI show that the final model has an acceptable good fit: RMSEA is .051, and GFI is .978. The standardized effects of this final model (6) are represented in Figure 2. For reasons of presentation we left out the error covariance[14].

As you can see in Figure 2, educational attainment strongly affects all proposed explanatory factors. However, only perceived threat has, in turn, a strong effect on ethnic distance. The conclusion must therefore be that perceived threat is the most important explanatory factor. Since the relative importance of the other explanatory factors is less obvious, we have computed the indirect effects of education through all explanatory factors in Table 6, together with their relative contribution in percentages. Perceived threat is indeed by far the most relevant explanatory factor, since it accounts for 56 per cent of the educational effect. Authoritarianism explains about 8 per cent of the educational effect, whereas both cognitive sophistication and open-mindedness are of minor importance for the explanation of the educational effect on ethnic distance, since they explain the educational effect for 1, respectively 2 per cent.

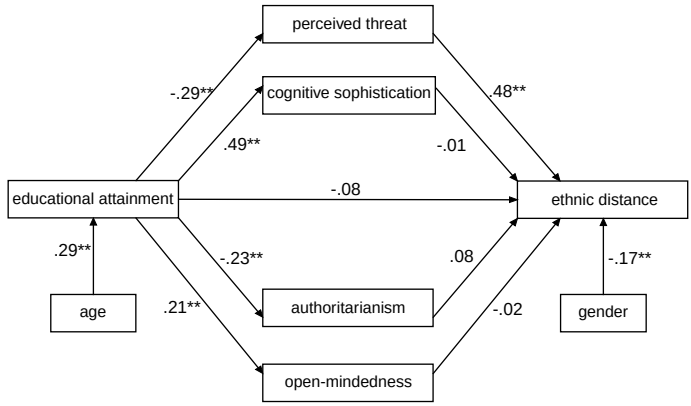
If you compare the explanatory power of the explanatory factors as shown in Table 4 (where all explanatory factors were added independently of each other) with the relative explanatory power of the explanatory factors as shown in Table 6 (where all explanatory factors were added at the same time), it becomes clear that particularly the explanatory power of authoritarianism is reduced, from 26 per cent to about 7 per cent. The explanatory power of the other factors, which already had a low explanatory power, remains rather weak. This implies that the explanation provided by perceived threat is so powerful, that there remains little room for other explanations.

Table 5. *The direct, indirect, and total standardized educational effects on ethnic distance in accumulating models, and goodness of fit indicators of the subsequent models. N = 301 young adults*

		Direct effect	Indirect effects	Total effects	X^2 [df]	p	RMSEA	GFI
1	Basic model	−.242**	x	x	3.427 [2]	.180	.049	.994
2	1+ Perceived threat	−.098*	−.150**	−.249**	11.324 [4]	.023	.078	.985
3	2+ Cognitive sophistication	−.091	−.157**	−.249**	16.610 [7]	.020	.068	.982
4	3+ Authoritarianism	−.085	−.165**	−.252**	71.521 [11]	.000	.136	.936
5	4+ Open-mindedness	−.084	−.169**	−.253**	78.554 [16]	.000	.115	.939
6	5+ Error covariance between perceived threat and authoritarianism	−.083	−.167	−.249**	26.598 [15]	.032	.051	.978

* $p < .05$; ** $p < .01$ (two-tailed)

Figure 2. *Results of Structural Equation Modelling. Standardized effects of the final model (6) in Table 5. N = 301 young adults.*



Conclusions and discussion

In this contribution, we set out to explain the recurrent educational effect on tolerance/intolerance. We focused on a specific form of intolerance, namely ethnic distance: the intention to avoid social contact with ethnic minorities in three different domains of social life, i.e. at school, in clubs/associations, and in the neighbourhood. The more educated young adults turned out to be less inclined to keep ethnic distance from ethnic minorities. Over time, many, sometimes

Table 6. *The relative influence of the explanatory factors in the complete model (6). Indirect standardized educational effects. N = 301 young adults.*

	Indirect educational effect	% of total educational effect
Educational attainment perceived threat ethnic distance	−.13988**	56.2%
Educational attainment cognitive sophistication ethnic distance	−.00270	1.1%
Educational attainment authoritarianism ethnic distance	−.01921	7.7%
Educational attainment open-mindedness ethnic distance	−.00420	1.7%
Total		66.7%

* p < .05; ** p < .01 (two-tailed)

contradictory, explanations have been proposed for this recurrent effect. We considered these explanations, which have been derived from different theoretical traditions, and we brought them together in this contribution. We considered educational attainment from a more sociological perspective as a structural characteristic referring to position in society. Furthermore, we considered educational attainment from cognitive-psychological, and social-psychological perspectives. According to the latter theories, educational attainment brings about personal development in a cognitive or personal sense. From these different theoretical perspectives we derived four explanatory factors that were considered to account for the educational effect on ethnic distance. We have shown that these four explanatory factors empirically referred to separate dimensions, and we ascertained the relative importance of each of these explanatory factors within a Dutch sample of young adults.

Cognitive sophistication and open-mindedness turned out to be unimportant for the explanation of the educational effect on ethnic distance. Nonetheless, these explanatory factors are quite strongly affected by educational attainment. They just do not account for the educational effect on ethnic distance, i.e. the intention to avoid social contact with ethnic minorities. The lack of explanatory power of these two explanations does not mean that we can consider the theories from which they were derived these explanatory factors to be useless; they might very well be applicable to the explanation of other social phenomena, for example as cultural or political participation.

Another explanatory factor, i.e. authoritarianism, proved to be of some importance for the explanation of the educational effect. The more educated are less likely to have authoritarian personalities. Authoritarian personalities are in turn somewhat more inclined towards ethnic distance. However, this social-psychological interpretation of the educational effect cannot compete with the structural, and more sociological, interpretation of education as a proxy for one's social position, and the corresponding explanation based on realistic conflict theory. The more educated young adults are less inclined to keep ethnic distance, because they perceive less threat from ethnic minorities. This perceived threat from ethnic minorities turned out to be the most important explanation for the educational effect on ethnic distance.

Since perceived threat of ethnic minorities is such an important explanatory factor, we suggest more research on the source of this perceived threat. We would like to stress here that our sample contained Dutch young adults, who, as no other cohort, have experienced a large influx of immigrants, as the number of immigrants over the last two, three decades is higher than ever before, and Dutch society has become more ethnically diverse. Consequently, young adults have been more often confronted with ethnic minorities than

older generations (e.g. at school). Since children of immigrants often attain a lower level of education (Tesser and Iedema 2001), they are a highly visible threat to young, lower educated, native Dutch adults. This 'real' ethnic threat may have affected their perceived ethnic threat (cf. Scheepers *et al.* 2002*a*)[15].

In addition to this, lower educated starters on the housing market experience many difficulties, as they can hardly afford to buy a house, and are less satisfied with their current housing situation (SCP 2001). Moreover, as the majority of ethnic minorities live in the cheaper council houses – the only houses that most lower educated young adults can afford – it is likely that the competition on the housing market is interpreted in ethnic terms by lower educated young adults. In turn, this might affect the general threat from ethnic minorities as perceived by young adults.

Moreover, the explanatory power of perceived threat may be higher for those young adults who attended a multi-ethnic school, or lived in a multi-ethnic neighbourhood than for young adults who attended a white school, and lived in a white neighbourhood. For the first group of young adults, one of the sources of perceived threat from ethnic minorities, i.e. the presence of ethnic minorities (cf. Scheepers *et al.* 2002*a*), is just more visible or present in their daily lives. In other words, the saliency of the immigration issue (Togeby 1998) may vary across social contexts. We suggest that further research should focus on this.

Furthermore, we think it is also important to find out whether it is possible to reduce the perceived threat from ethnic minorities, and if so, how. The most obvious way would be to realize this at schools. We have already discussed one possibility, i.e. a multi-ethnic composition of the school population. However, there may be other ways to reduce the perceived threat from ethnic minorities, for example through special training programmes (Aronson and Gonzalez 1988). If we were able to take away this perceived threat, the lower educated might show less inclinations to avoid social contact with ethnic minorities.

Maybe in the long run, when the young adults have grown older, have a job, own a house, and have settled down, the explanatory power of perceived threat will decline, as these young adults will then have reached a distinct social position for themselves. Only time will tell, so we have no other option than to await the results of the forthcoming waves of this panel study.

Notes

1. There are some exceptions: some studies focus on the country level (see for example Weil 1985; Hello *et al*. 2002), or on other social contexts, such as the family of origin or the neighbourhood that might account for the educational effect (see for example Vollebergh, Iedema and Raaijmakers 2001; Hello *et al*. 2004).

2. There are some exceptions: Jenssen and Engesbak (1994) and Wagner and Zick (1995) had previously estimated the relative importance of a couple of explanatory factors. However, they used some invalid and unreliable measurements. Moreover, these studies did not indicate to what extent they have actually explained the relationship between educational attainment and ethnic attitudes by incorporating all these 'intermediary' factors.
3. In 1995, educational attainment of young adults contained two extra categories: secondary education and special secondary education.
4. The Mokken scaling procedure is an advanced scaling procedure which is based on Guttman's deterministic scaling procedure.
5. More information on this verbal ability test is available on request.
6. Cronbach's alpha based on all items is .87.
7. An overview of these items is available on request.
8. These consisted of 100 Big-Five markers originally developed by Goldberg (1992), and 2 additional items.
9. More information on the items used to tap open-mindedness is available on request,
10. Since there is only one indicator for Verbal Ability, this measured indicator is assumed to fully represent the latent scale of verbal ability, and therefore this lambda coefficient is set to 1, with no error variance.
11. To be sure, we did not allow any error covariance across factors; only within factors did we allow some error covariances if this improved the model fit.
12. RMSEA values range between 0.0 and 1.0. The smaller the value of RMSEA, the better the model fit. According to Browne and Cudek (1993), as a rule of thumb, RMSEA values less than 0.08 imply adequate model fit and values less than 0.05 imply good model fit. Moreover, the higher the GFI value, which also ranges between 0.0 and 1.0, the better the fit. Overall, the criterion is that GFI values lower than .90 indicate a questionable fit.
13. The fact that the indirect effects somewhat decreased after the inclusion of the error covariance between perceived threat and authoritarianism can be explained by the fact that the indirect effects are computed on the basis of the fitted covariance matrix (Jöreskog and Sörbom 1993, p.153), which changed as a consequence of the improved fit.
14. The standardized strength of this error covariance is .375, $p < .01$.
15. However, the immigration rate could not explain cross-national differences in the educational effect on ethnic prejudice (see Hello *et al.* 2002). We cannot generalize this finding to young adults, since the data set we used for this study is based on the total population (aged over 18), and contains mainly respondents who have been socialized by the educational system in times that they were hardly confronted with ethnic minorities at school or in the labour market.

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Appendix A

Ethnic distance

Table A1. *Items measuring ethnic distance in young adults in 2000. Answer categories: (1) 'I would not object'; (2) 'I might not object'; (3) 'I might object'; (4) 'I would object'. Mean score for each item, and mean score, Loevinger's H and reliability (rho) for each sub-scale (N = 301 young adults)*

Would you object if . . .	Mean Score	
Ethnic distance at school		
. . . about 10 per cent of the pupils of your high school belonged to an ethnic minority group?	1.21	
. . . about a quarter of the pupils of your high school belonged to an ethnic minority group?	1.40	
. . . about half of the of the pupils of your high school belonged to an ethnic minority group?	2.00	
. . . more than half of the pupils of your high school belonged to an ethnic minority group?	2.27	
Mean score on Mokken scale		6.87
Loevinger's H		0.80
Rho (reliability)		0.92
Ethnic distance in club/association		
. . . about ten per cent of the members of your club/association belonged to an ethnic minority group?	1.18	
. . . about a quarter of the members of your club/association belonged to an ethnic minority group?	1.33	
. . . about half of the members of your club/association belonged to an ethnic minority group?	1.74	
. . . more than half of the members of your club/association belonged to an ethnic minority group?	1.95	
Mean score on Mokken scale		6.21
Loevinger's H		0.84
Rho (reliability)		0.93
Ethnic distance in the neighbourhood		
. . . in your town (but not in your neighbourhood) a house was made available to lodge asylum seekers?	1.42	
. . . in your neighbourhood a house was made available to lodge asylum seekers?	1.78	
. . . in your street a house was made available to lodge asylum seekers?	1.90	
. . . the house next to you was made available to lodge asylum seekers?	2.19	
Mean score on Mokken scale		6.99
Loevinger's H		0.84
Rho (reliability)		0.93

Table A2. *Factor loadings of the three Mokken scales on Ethnic Distance, and Cronbach's alpha for Ethnic Distance, (N = 301 young adults)*

Ethnic distance	
Ethnic distance at school	0.91
Ethnic distance at clubs	0.92
Ethnic distance in the neighbourhood	0.60
Cronbach's alpha	0.81

Note: Missing values on the sub-scales (3) are replaced by the mean score on the subscale.

Appendix B

Table B1. *Descriptions of the individual characteristics of young adults, constructed explanatory factors and ethnic distance*

	Mean	SD	Minimum	Maximum	N
Age	22.18	2.19	18	27	301
Gender	1.56	.50	1	2	301
Church member	1.83	0.57	1	3	301
Church attendance	2.27	1.04	1	4	106
Denomination	1.84	1	1	4	104
Amount of money to spend	4.73	1.94	1	12	300
Educational attainment	5.69	1.64	2	8	301
Perceived threat	2.86	1.31	1	6.5	261
Cognitive sophistication	28.03	7.00	8	42	299
Authoritarianism	3.18	1.16	1	6.5	261
Open-mindedness	4.85	.89	1.67	7	299
Ethnic distance	16.34	6.14	9.72	38.88	301